

Figure 1

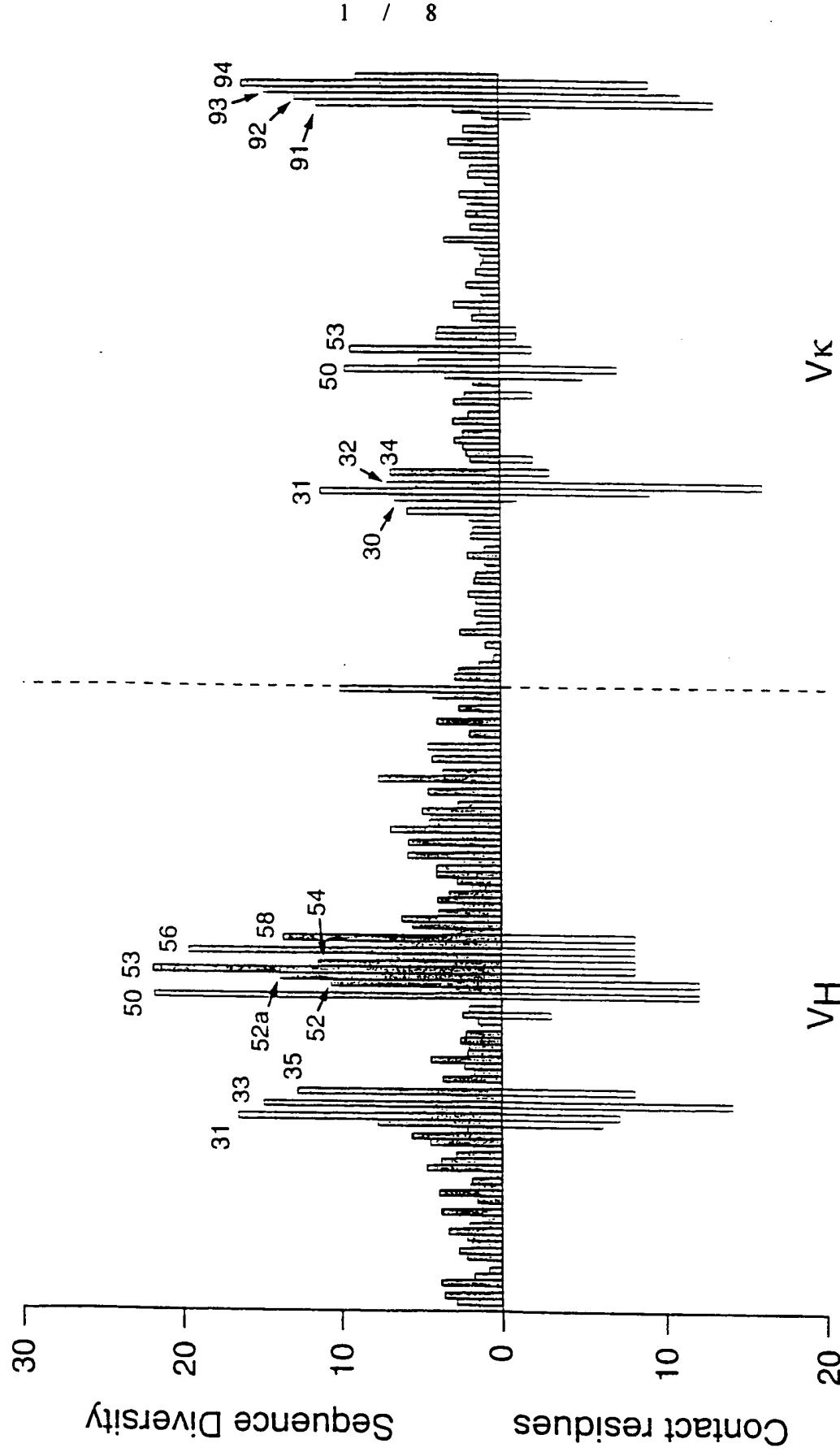


Figure 2

H30 S V A M S W V R Q A P G K G L E W V S H20
GAG GTG CAG CTG TTG GAG TCT GGG GGA GGC TCG CCA GGT CCT CTC AGA CTC TCC TGT GCA GCC TCR CGA TTT ACC TTT AGC
AGG TAT **ECC** ATG **AGG** TGG GTC CGC CAG GCT CCA GGG AAG CGG CTC GAG TGG TCC TCA **GGT** ATT **AGT AGT AGT** GGT AGG ACA **GGT** TAG TAC
HCDR2

H40 S V A M S W V R Q A P G K G L E W V S H50 H52 a
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A D S V K G R F T I S R D N S K N T L Y L H80 H82 a b c
T A V Y C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR1

H60 S G G G S G G G S H98 H1100 H1113
TCA GGC GGA GGT GGC AGC GGC GGT GGC GGG TCG AGC GAC ATC CAG ATG ACC CAG TCT CCA TCC TCC TGT GCA TCT GCA GCC GAC AGA
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR3

H70 S G G G S G G G S H1113
TCA GGC GGA GGT GGC AGC GGC GGT GGC GGG TCG AGC GAC ATC CAG ATG ACC CAG TCT CCA TCC TCC TGT GCA TCT GCA GCC GAC AGA
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR4

H80 S G G G S G G G S H113
TCA GGC GGA GGT GGC AGC GGC GGT GGC GGG TCG AGC GAC ATC CAG ATG ACC CAG TCT CCA TCC TCC TGT GCA TCT GCA GCC GAC AGA
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR5

H90 S G G G S G G G S H1100 H1113
TCA GGC GGA GGT GGC AGC GGC GGT GGC GGG TCG AGC GAC ATC CAG ATG ACC CAG TCT CCA TCC TCC TGT GCA TCT GCA GCC GAC AGA
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR6

H100 S G G G S G G G S H1113
TCA GGC GGA GGT GGC AGC GGC GGT GGC GGG TCG AGC GAC ATC CAG ATG ACC CAG TCT CCA TCC TCC TGT GCA TCT GCA GCC GAC AGA
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR7

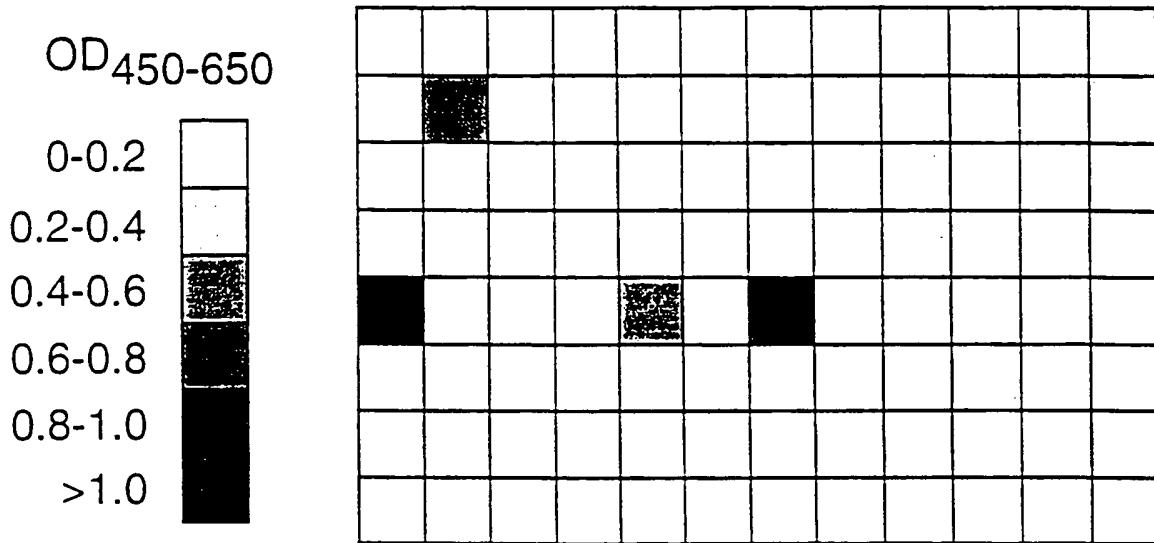
H110 S G G G S G G G S H1113
TCA GGC GGA GGT GGC AGC GGC GGT GGC GGG TCG AGC GAC ATC CAG ATG ACC CAG TCT CCA TCC TCC TGT GCA TCT GCA GCC GAC AGA
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR8

H120 S G G G S G G G S H1113
TCA GGC GGA GGT GGC AGC GGC GGT GGC GGG TCG AGC GAC ATC CAG ATG ACC CAG TCT CCA TCC TCC TGT GCA TCT GCA GCC GAC AGA
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR9

H130 S G G G S G G G S H1113
TCA GGC GGA GGT GGC AGC GGC GGT GGC GGG TCG AGC GAC ATC CAG ATG ACC CAG TCT CCA TCC TCC TGT GCA TCT GCA GCC GAC AGA
GCA GAC TCC GTC AAG CGG CTC ACC ATC TCC AGC AAC TCC AAG AAC ACC CTC AGC TAT CTG CAA ATG AAC AGC AGC CTG AGA GCC GAG GAC
A C A K S Y G A F D Y W G Q G T L V L H110 H113
ACG GCC GTA TAT TAC TGT GCG AAA **ACT TAT GGT GCT** TTT GAC TAC TCG GGC CAG GGA ACC CTC GTC ACC GTC GTC TCC TGT GCA TCT GCA GCC GGC GGT
HCDR10

- Diversified in "Primary" library only
- Diversified in "Somatic" library only
- Diversified in "Primary" and "Somatic"

"primary" NNK library before pre-selection



"primary" NNK library after pre-selection

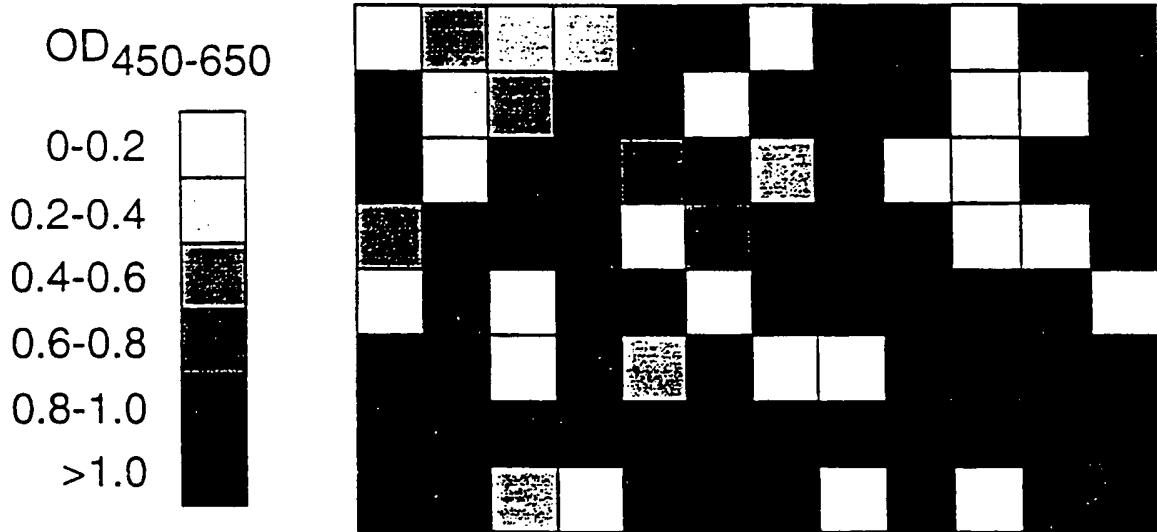


Figure 3

OD₄₅₀₋₆₅₀ = 0.0 to >1.0

Figure 4

Clones	Antigen	Library	Heavy chain (framework DR47)				Light chain (framework DR49)				No.
			CDR1	CDR2	CDR3	CDR1	CDR2	CDR3	CDR3		
UB/A 1-9	Bovine ubiquitin Primary NNK	Somatic NNK	SYAMS	<u>I</u> GSEGGMPTTYADSVKG	<u>G</u> GSMFDY	RASQISSYLN	BASLQS	QOSSNIPYT	9	9	
UB/B 1,3-10	"	Somatic NNK	AYAMT	AISGGGGSTYYADSVKG	<u>K</u> ASSFDY	RASQISSYLN	AASSLQS	QOSSYSPST	9	9	
BIP A 1,3,6,9	FabB/P	Primary NNK	SYAMS	<u>L</u> SPFGKQDTSYADSVKG	<u>R</u> AGIFDY	RASQISSYLN	HASFLQS	QOYHALRPLT	5	5	
BIP A 4	"	"	SYAMS	<u>G</u> IRRVGQATSYADSVKG	<u>G</u> GRLFDY	RASQISSYLN	YASHLQS	QOYLLDPYT	1	1	
BIP A 5,7,9	"	"	SYAMS	<u>A</u> INTKGMITTDYADSVKG	<u>G</u> SQAFDY	RASQISSYLN	QASFLQS	QOQYNKPHT	3	3	
BIP B 1,4,6,10	"	Somatic NNK	NYQMTH	AISGGGGSTYYADSVKG	<u>G</u> TRHFDY	RASQISSYLN	AASSLQS	QOSSYSTPYT	9	9	
H/SA 1,2,7,8	Bovine	Primary NNK	SYAMS	<u>A</u> ISPKGKRTYYADSVKG	<u>R</u> DKLFDY	RASQISSYLN	EASTLQS	QOEKMMPLT	4	4	
Histone											
H/SA 6	"	"	SYAMS	RTPAGKRTTYADSVKG	<u>P</u> SPPFDY	RASQISSYLN	HASLQS	QAGQHARPLT	1	2	
H/SA 3,9	"	"	SYAMS	RTPAGKRTTYADSVKG	<u>Q</u> VSRFDY	-	-	-	-	1	
H/SA 10	"	"	SYAMS	TISPGQLRTTYADSVKG	<u>G</u> PPRFDY	-	-	-	-	1	
H/SA 4	"	"	SYAMS	TISPKGRSTTYADSVKG	<u>T</u> NRSFDY	RASQISSYLN	RASFLQS	QQRRAKRPPT	1	1	
H/SA 1,3	"	Somatic NNK	KYRMF	AISGGGGSTYYADSVKG	<u>G</u> RMFPDY	RASQINENLS	AASSLQS	QOSSYSTPYT	2	2	
H/SB 6	"	"	RYBMH	AISGGGGSTYYADSVKG	<u>N</u> EPRFDY	RASQSIEMRLN	AASSLQS	QOSSYSTPYT	1	1	
H/SB 2	"	"	RYBMG	AISGGGGSTYYADSVKG	<u>G</u> YHKFDY	RASQISTLUN	AASSLQS	QOSSYSTPYT	3	3	
H/SB 4,7,9	"	"	RYBMG	AISGGGGSTYYADSVKG	<u>G</u> YHKFDY	RASQSIGFPLS	AASSLQS	QOSSYSTPYT	1	1	
H/SB 5,8	"	Primary NNK	RYBMG	AISGGGGSTYYADSVKG	<u>G</u> YHKFDY	RASQSLRLUN	AASSLQS	QOSSYSTPYT	2	2	
N/PA 2,7,10	N/PA-BSA	"	SYAMS	RIPARGTVTHYADSVKG	<u>G</u> GLRFDY	RASQISSYLN	HASALQS	QOSYRKPTT	3	3	
N/PA 3	"	"	SYAMS	GISHIGGSNTRYADSVKG	<u>B</u> HKGFDY	RASQISSYLN	RASTLQS	QOGVRFPAT	1	1	
N/PA 5,6,9	"	"	SYAMS	RIAPEGGRTKYADSVKG	<u>G</u> RYWFDY	RASQISSYLN	RASFLQS	QOSRNAPTT	3	3	
N/PA 1,8	"	"	SYAMS	TSYLGKTRYADSVKG	<u>S</u> RRTFDY	RASQISSYLN	KASTLQS	QFRSRPPAT	2	2	

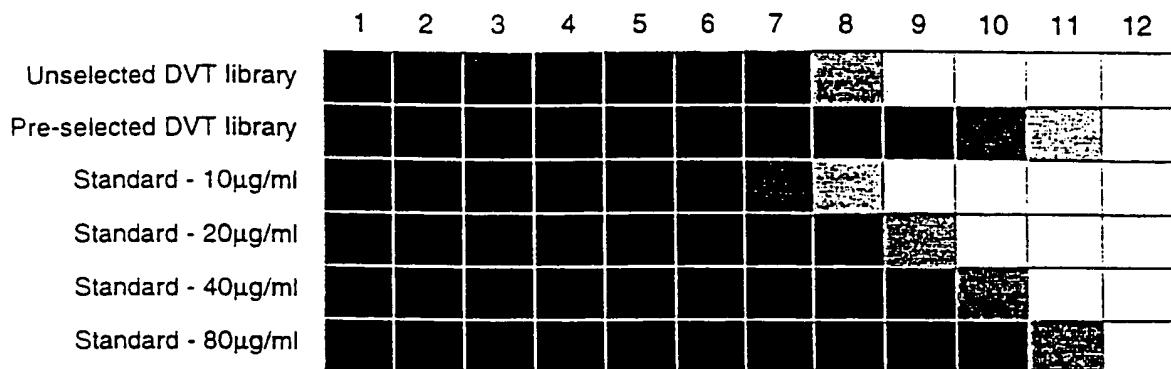
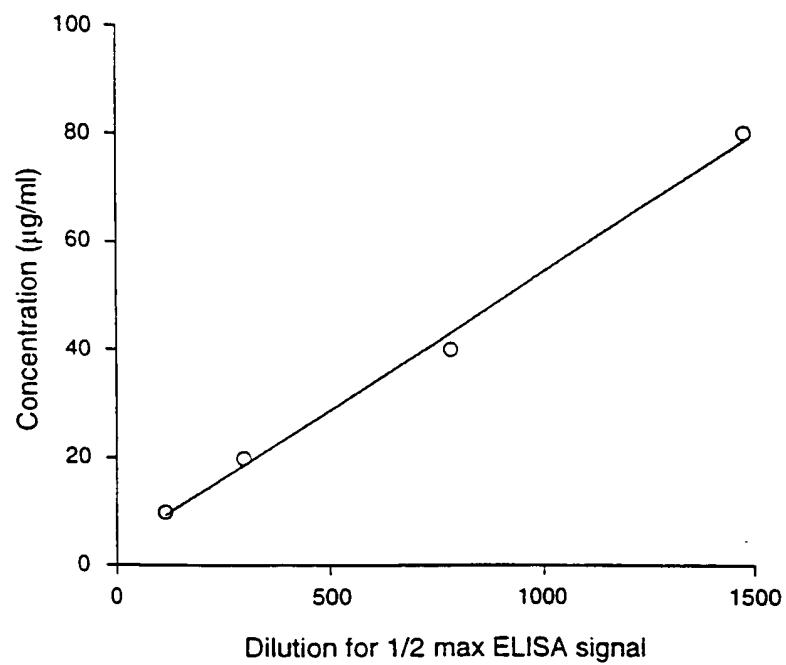
Figure 4 Cont.

NIP B1	"	Somatic NK	RYGMH	AISGGGSTYYADSVKG	RGLGFDY	RASQISSSYLN	AASSLQS	QOSYSTPLT	1
NIP B24,7	"	"	SYRMV	AISGGGSTYYADSVKG	RGMAFDY	RASQSIHSRLS	AASSLQS	QOSYSTPLT	4
NIP B5,6	"	"	KYNMH	AISGGGSTYYADSVKG	ARMFDY	RASQISSSYLN	AASSLQS	QOSYSTPLT	2
NIP B8	"	"	RYRMH	AISGGGSTYYADSVKG	TPRPFDY	RASQSIQMGLS	AASSLQS	QOSYSTPLNT	1
NIP B9	"	"	RYRMH	AISGGGSTYYADSVKG	TPRPFDY	RASQISSEVLL	AASSLQS	QOSYSTPLT	1
10 OG 1	FITC-BSA	Primary NK	SYAMS	TISPYGKQTTRYADSVKG	KSQHF DY	RASQISSSYLN	AASPLQS	QCRGGGPPT	1
10 OG 2	"	"	SYAMS	TTPRGSLTSYADSVKG	TAPPF DY	RASQISSSYLN	BASPLQS	QOSORAKPST	1
10 OG 3	"	"	SYAMS	GISAYGTVYYADSVKG	RRAGFDY	RASQISSSYLN	BASPLQS	QOPRHMPQT	1
10 OG 5	"	"	SYAMS	STNSGLATAYADSVKG	RSFRAFDY	RASQISSSYLN	HASPLQS	QQRHTNPPT	1
10 OG 6	"	"	SYAMS	GTTTRGQQTTRYADSVKG	TYPHFDY	RASQISSSYLN	NASPLQS	QOSKLSPYT	1
10 OG 7	"	"	SYAMS	TIPARGGHTYYADSVKG	SAKAFDY	RASRISSYLN	OASNLSQ	QBSAGPLT	1
10 DH 1	"	Somatic NK	MYRMG	AISGGGSTYYADSVKG	HTFRFDY	RASQSIHSRLS	AASSLQS	QOSYSTPPT	1
10 DH 2,3	"	"	SYAMT	AISGGGSTYYADSVKG	KIGMF DY	RASQISITRLR	AASSLQS	QOSYSTPPT	2
11 OG 1	Human	Primary NK	SYAMS	AIIRFGSATTRYADSVKG	YLHIFDY	RASQISSSYLN	RASPLQS	QHPGLPPT	1
leptin									
11 OG 2,3	"	"	SYAMS	AIIRFGSATTRYADSVKG	YLHIFDY	RASQISSSYLN	AASALQS	QASDLPPT	2
11 DH 2	"	Somatic NK	RYRMV	AISGGGSTYYADSVKG	RPSTFDY	RASQIAKNNLS	AASSLQS	QOSYSTPST	1
11 DH 3	"	"	RYRMV	AISGGGSTYYADSVKG	RPSTFDY	RASQSIKORLH	AASSLQS	QOSYSTPST	1
12 OG 12	Human	Primary NK	SYAMS	SIAPAGRHTYYADSVKG	NIRIFDY	RASQISSSYLN	SASPLQS	QQRAGTPTVLT	2
trygogobulin									
12 OG 3	"	"	SYAMS	GRMIGRHTYYADSVKG	NSMFDY	RASQISSSYLN	QASPLQS	QQRMLRPPT	1
12 DH 12,3	"	Somatic NK	RYPMV	AISGGGSTYYADSVKG	GYAFDY	RASQSMVRMLT	AASSLQS	QOSYSTPHT	3
13 OG 1	BSA	Primary NK	SYAMS	TTASGPNTTRYADSVKG	NHSTFDY	RASQISSSYLN	BASPLQS	QCNRITAPPT	1
13 OG 2	"	Primary DVT	SYAMS	TTIYAGSNNTYYADSVKG	GYTFDY	RASQISSSYLN	YASNLQS	QSDLSPTT	1

Figure 4 Cont.

13 CG3	"	Primary NNK	SYAMS	<u>MIFGGY-TKYADSMKG</u>	NADLFDY	RASQISSYLN	TASRLOS	QMRRIKPAT	1
13 DH1	"	Somatic NNK	LYNMV	AISGSGGGSTYYADSMKG	EWSRFDY	RASQSISSKL	AASSLOS	QGSYSTPKT	1
13 DH2	"	"	GYMS	AISGSGGGSTYYADSMKG	THDSFDY	RASQSISSDLYN	AASSLOS	QGSYSTPKT	1
13 DH3	"	"	RYGMV	AISGSGGGSTYYADSMKG	HLSRFDY	RASQSISSKYL	AASSLOS	QGSYSTPKT	1
14 CG 1,2,3	Hen egg	Primary NNK	SYAMS	<u>EILPRGHHTAYADSMKG</u>	SGKHFHDY	RASQISSYLN	NASTLOS	QPKKALPPT	3
<i>Mosazine</i>									
14 DH2,3	"	Somatic NNK	YYEML	AISGSGGGSTYYADSMKG	PMFSFDY	RASQISHDLY	AASSLOS	QGSYSTPKT	2
19 CG 1,3	Mouse IgG	Primary DYT	SYAMS	<u>SIGSSGYYGTGYYADSMKG</u>	GYSFSDY	RASQISSYLN	DASSLOS	QSDSSSPYT	2
19 DH2	"	Somatic DYT	DYEM	AISGSGGGSTYYADSMKG	DGAGFDY	RASQISGSSLS	AASSLOS	QGSYSTPKT	1
20 CG 1	Human IgG	Primary NNK	SYAMS	<u>AISGLGKQTRYYADSMKG</u>	GYSRFDY	RASQISSYLN	SASLLOS	QLGTPPT	1
20 DH1	"	Somatic NNK	BYEM	AISGSGGGSTYYADSMKG	SMFLFDY	RASQISFTNLQ	AASSLOS	QGSYSTPKT	1
20 DH2	"	"	BYEM	AISGSGGGSTYYADSMKG	SMFLFDY	RASQISGTLR	AASSLOS	QGSYSTPKT	1

* denotes sequenced

Figure 5a**Figure 5b**

DRAFT 220 "6 E 6 T T S 6 0

Figure 6

